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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/816,492	03/23/2001	Hongyong Zhang	07977-029003 / US3002/326	1777
26171	7590	04/05/2005	EXAMINER	
FISH & RICHARDSON P.C. 1425 K STREET, N.W. 11TH FLOOR WASHINGTON, DC 20005-3500			TON, MINH TOAN T	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SM

Office Action Summary	Application No.	Applicant(s)	
	09/816,492	ZHANG, HONGYONG	
	Examiner	Art Unit	
	Toan Ton	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02/18/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Sugawara et al (JP 05-127195, IDS).

Sugawara discloses an active matrix LCD device comprising (see at least Figures 4a-4b): a substrate 20; a plurality of parallel source lines 13 and a plurality of gate lines formed over the substrate, the source lines and the gate lines being arranged relative to one another to form a matrix of pixel regions over the substrate with each of the pixel regions bounded by two adjacent source lines and two adjacent gate lines; a plurality of thin film transistors (TFTs) 11 formed over the substrate, at least one TFT disposed at each intersection of the source lines and gate lines in each of the pixel regions; a first interlayer insulating film 22 formed over the TFTs; a black matrix 15 comprising a light shielding layer formed over the first interlayer insulating film, the light shielding layer disposed to cover completely at least the gate lines (see at least Figure 4a); a second interlayer insulating film 23 formed over the light shielding electrode; a pixel electrode 14 disposed in each of the pixel regions over the second interlayer insulating film, wherein a periphery of the pixel electrode overlaps with the light shielding electrode to form a capacitor with the light shielding layer, the second interlayer insulating film and the pixel electrode; and a counter electrode in electrical communication with the light shielding layer,

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wherein the light shielding layer is electrically connected to a same potential as the counter electrode (see at least [0030] lines 1-3, [0043] lines 1-2).

Sugawara discloses the second interlayer insulating film interlayer insulating film interposed between the pixel electrode and the first interlayer insulating film and inherently preventing any direct electrical contact there between (see at least Figure 4b).

Sugawara discloses the second interlayer insulating film having a flat upper surface over the light-shielding electrode (see at least Figure 4b).

Sugawara discloses the pixel electrode being transparent (ITO material, see at least [0027], line 15)

Sugawara discloses the light-shielding layer comprising materials such as Cr (see at least [0027], lines 5-6).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugawara as applied to claims 1-3, 5 and 6 above.

Insulating materials such as SiN, SiO are functionally equivalent to each other, well-insulating materials. Sugawara discloses SiN as an insulating material. Therefore, it would have

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been obvious to one of ordinary skill in the art to employ SiO₂, as functionally equivalent to SiN, well-insulating materials.

Metals used for light shielding such as Cr, Ta, Ti, are functionally equivalent to each other, high light-shielding materials. Sugawara discloses materials used for the light-shielding layer such as Cr, Ta. Therefore, it would have been obvious to one of ordinary skill in the art to employ Ti, as functionally equivalent to materials such as Cr/Ta, high light shielding materials.

5. Claims 8-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugawara as applied to claims 1-3, 5 and 6 above, and further in view of Wakai et al (US 5003356).

The limitation not disclosed by Sugawara is the overlapping of the pixel electrode and the one of the gate/source lines.

Wakai discloses an active matrix LCD device comprising the pixel electrode(s) overlapping the gate or/and the source lines, wherein such device yields advantages such as high opening ratio. Therefore, it would have been obvious to one of ordinary skill in the art to employ the pixel electrode overlapping the gate or/and the source lines, wherein the device having such overlapping portions yields advantages such as high opening ratio.

Per particular materials of the insulating layer and the light-shielding layer, see detailed explanations above.

TFTs having a top-gate structure are at least functionally equivalent TFTs having a bottom-gate structure, as common and known in the art. Therefore, it would have been obvious to one of ordinary skill in the art to form TFT having a top gate structure, as at least functionally equivalent to TFT having a bottom gate structure, as common and known in the art.


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Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan Ton whose telephone number is (571) 272-2303.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 2, 2005


TOANTON
PRIMARY EXAMINER